**Request for Reconsideration:**

Applicants are amending claim 1 and canceling claim 4 merely to clarify the claimed invention. No new matter is added by the foregoing amendments. Accordingly, claims 1, 2, and 5-11 currently are pending in the present application. Applicants respectfully request that the Examiner reconsider the above-captioned patent application in view of the foregoing amendments and the following remarks.

**Remarks:**

1. Objections and Rejections

Applicants acknowledge with appreciation that the Examiner indicates that claims 5-9 include allowable subject matter and would be allowable if rewritten in independent form to include the limitations of their base claim and any intervening claims. Claims 1, 2, 4, 10, and 11 stand rejected under 35 U.S.C. § 103(a), as allegedly rendered obvious by Patent No. JP40318527A to Hitoshi et al. ("Hitoshi") in view of Patent No. U.S. 5,067,235 to Kato et al. ("Kato"). Applicants respectfully traverse.

3. 35 U.S.C. § 103(a)

In order to establish a prima facie case for obviousness, the Office Action must fulfill three (3) criteria. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to those of ordinary skill in the art, to modify the primary reference as proposed by the Office Action. Second, there must be a reasonable expectation of success. Third, the prior art references must disclose or suggest all the claim limitations. MPEP 2143. In view of the foregoing amendments and the following remarks, Applicants maintain that the Office Action fails to establish a prima facie case of obviousness with respect to claims 1, 2, 10, and 11.

a. Claim 1

As noted above, claim 1 stands rejected as allegedly being rendered obvious by Hitoshi in view of Kato. The Office Action asserts that the combination of Hitoshi with Kato discloses each and every feature of the claimed invention. See Office Action, Page 2, Lines 19-20. Applicants respectfully traverse.

Independent claim 1, as amended, recites that "said introduction tank is formed of a first material, said discharge tank is formed of a second material, and a heat conductivity of a first material is greater than a heat conductivity of a second material, and a specific gravity of a first material is less than a specific gravity of a second material." In contrast, Hitoshi discloses a pre-cooler having an inlet header 7 and an outlet header 10, which are connected by a cooling pipe including a stainless steel high-temperature cooling side 8 and a copper low-temperature cooling side 9. The less-expensive copper is used in low-temperature cooling side 9 to reduce manufacturing cost and maintain thermal expansion on both sides 8,9 of the cooling pipe by accounting for the decreasing temperature of the compressed air as it passes through the pre-cooler. Copper is a superior thermal conductor ($\lambda$=401 at 300° K), while stainless steel is an inferior metallic thermal conductor ($\lambda$=14 at 300° K).

Further, in Hitoshi, the copper used in the low-temperature cooling side 9 has a **higher** specific gravity than the stainless steel used on the high-temperature cooling side 8. The Office Action acknowledges this, stating that "copper (8.9) has a greater specific gravity than stainless steel (7.8)." See Office Action, Page 3, Lines 7-8. Thus, in Hitoshi, the material used to construct the first (copper) tank has greater heat conductivity and a **higher** specific gravity, and the material used to construct the second (stainless steel) tank has lower heat conductivity and a **lower** specific gravity. Therefore, Hitoshi fails to disclose or suggest at least that "said introduction tank is formed of a first material, said discharge tank is formed of a second material, and a heat conductivity of a first material is greater than a heat conductivity of a second material, and a specific gravity of a first material is less than a specific gravity of a second material," as recited in amended claim 1.

The Office Action applies Kato as allegedly disclosing a heat exchanger that has a plurality of tubes extending between two headers, and fins stacked between the tubes for increasing the heat transfer surface area of the tube. See Office Action, Page 3, Lines 8-10. However, Kato fails to cure the deficiencies outlined above with respect to Hitoshi. Accordingly, Hitoshi and Kato, alone or in any combination, do not disclose or suggest each and every element of amended claim 1.

Moreover, the art of record may not be relied upon to overcome the above-noted deficiencies of Hitoshi. A reference may not be modified to establish a prima facie case of obviousness if the modification would change the reference's principle of operation. See MPEP 2143.01. Hitoshi discloses that copper is used for low-temperature cooling side 9 because its thermal expansion, when exposed to lower-temperature compressed air, is similar to the less heat conductive stainless steel used for high-temperature cooling side 8 that is exposed to the higher-temperature compressed air. Hitoshi further praises this arrangement as allegedly reducing thermal stress in the pre-cooler serving as a heat exchanger. Thus, Hitoshi may not be modified to change this principle of operation.

Accordingly, the Office Action fails to establish a prima facie case of obviousness because the art of record, whether taken alone or in combination, fails to disclose each and every feature of the claimed invention as a whole. Therefore, Applicants respectfully request the Examiner to withdraw the obviousness rejection of claim 1.

b. Claims 2, 10, and 11.

Claims 2, 10, and 11 depend from amended, independent claim 1. MPEP 2143.03 states that "[i]f an independent claim is non-obvious under 35 U.S.C. 103, then any claim

depending therefrom is nonobvious." Therefore, we respectfully request the Examiner to withdraw the obviousness rejection of claims 2, 10, and 11.

**Conclusion:**

Applicants maintain that the above-captioned patent application is in condition for allowance, and such disposition is earnestly solicited. If the Examiner believes that the prosecution of this application may be furthered by discussing the application, in person or by telephone, with Applicants' representative, we would welcome the opportunity to do so.

Applicants believe that no fees are due as a result of this responsive amendment. Nevertheless, in the event of any variance between the fees determined by Applicants and the fees determined by the U.S. Patent and Trademark Office, please charge or credit any such variance to the undersigned's **Deposit Account No. 02-0375**.

Respectfully submitted,
BAKER BOTTS L.L.P.

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